

Remarks

As set forth below, Applicant respectfully submits that the claimed invention is allowable over the cited references because the rejections are based on prior art that fails to correspond to numerous aspects of the claimed invention.

In the instant Office Action dated September 17, 2007, claims 1-5 and 7-17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Park *et al.* (U.S. Patent No. 6,391,749); and claim 6 stands rejected under 35 U.S.C. § 103(a) over Park *et al.*

Applicant respectfully traverses the Section 102(b) rejection of claims 1-5 and 7-17 because the cited portions of the Park reference do not correspond to the claimed invention which includes, for example, aspects directed to using an inert gas as the carrier gas. The Examiner continues to improperly assert that Park teaches using hydrogen as a carrier gas and that hydrogen is an inert gas. In contrast, the cited portions of Park teach that hydrogen is used as a reducing gas, not as a carrier gas (*see, e.g.*, Col. 5:18-20), and that hydrogen gas easily reacts with the passivation layer (*i.e.*, Park teaches that hydrogen is not an inert gas). *See, e.g.*, Col. 4:33-37. The Examiner responded to Applicant's previous arguments regarding these issues by citing Park at Col. 3:48-59, which discusses source gases, while making no mention of a carrier gas or hydrogen. The Examiner also responded by citing Park at Col. 5:11-28, which teaches using hydrogen as a reducing gas, while making no mention of a carrier gas. Moreover, a word search of the Park reference reveals that Park fails to make any mention of a carrier gas or an inert gas. Thus, the cited portions of the Park reference do not teach using an inert gas as the carrier gas as in the claimed invention. Accordingly, the Section 102(b) rejection of claim 1-5 and 7-17 is improper and Applicant requests that it be withdrawn.

In addition, the cited portions of the Park reference further fail to correspond to the claimed invention which includes, for example, aspects directed to the gaseous silicon compound being a mixture of a first gaseous silicon compound which is free of chlorine, and a second gaseous silicon compound which includes chlorine. The Examiner continues to improperly assert that Park teaches using such a mixture as a source gas. In actuality, the cited portions of Park teach using silane (SiH_4) gas, disilane (Si_2H_6), or dichlorosilane (SiH_2Cl_2) as the source gas (*i.e.*, one of these gases is used as the source

gas). *See, e.g.*, Col. 3:38-43. Thus, Park teaches using either a silicon gas that does not contain chlorine or using a silicon gas that does contain chlorine, but does not teach using a mixture of these two silicon gases as in the claimed invention. The Examiner responded to Applicant's previous arguments regarding this issue by citing Park at Col. 3:48-59, which teaches using a silicon source gas in combination with a germanium source gas, but fails to mention the use of any mixture of silicon gases. Thus, the cited portions of the Park reference do not teach using a mixture of a silicon gas that does not contain chlorine and a silicon gas that does contain chlorine as in the claimed invention. Therefore, the Section 102(b) rejection of claims 1-5 and 7-17 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the Section 102(b) rejection of dependent claims 2-5 and 7-17 because the cited portions of the Park reference do not correspond to numerous aspects of these claims. Applicant presented these arguments in the Office Action Response dated July 3, 2007, to which the Examiner failed to respond as required. According to M.P.E.P. § 707.07(f), "Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it." In the instant Office Action, the Examiner repeated the previous rejection of the dependent claims without responding in any manner to Applicant's arguments regarding the lack of correspondence between the cited portions of the Park reference and these claims.

As a first example, regarding claim 8, the cited portions of the Park reference do not correspond to claim limitations directed to replacing the inert carrier gas with a carrier gas which includes hydrogen. As discussed above in relation to the Section 102(b) rejection of claim 1, the cited portions of Park teach using hydrogen as a reducing gas, not as a carrier gas. *See, e.g.*, Col. 5:18-20. The Park reference further teaches that during period T3 when the reducing gas is being introduced into the chamber, the source gas is not being injected into the chamber. *See, e.g.*, Figure 1 and Col. 3:60-62. Applicant notes that (as discussed above) the Park reference makes no mention of a carrier gas. Thus, Park does not teach switching from using an inert gas as the carrier gas to using hydrogen as the carrier gas as asserted by the Examiner. Accordingly, the

Section 102(b) rejection of claim 8 is improper and Applicant requests that it be withdrawn.

As a second example, regarding claim 9, the cited portions of the Park reference do not correspond to claim limitations directed to three time periods in which the carrier gas is switched from an inert gas in period one to hydrogen in period two and back to the inert gas in period three. The cited portions of the Park reference teach injecting a source gas during period T1, stopping the source gas and injecting an etching gas (*i.e.*, a highly reactive gas such as chlorine gas) during period T2, and stopping the etching gas and injecting a reducing gas (*e.g.*, hydrogen) during period T3. *See, e.g.*, Figure 1 and Col. 3:60 to Col. 4:37. Thus, the cited portions of the Park reference do not teach any corresponding use of different types of carrier gases during different time periods as asserted by the Examiner. Therefore, the Section 102(b) rejection of claim 9 is improper and Applicant requests that it be withdrawn.

As a third example, regarding claim 13, the cited portions of the Park reference do not correspond to claim limitations directed to using nitrogen as the carrier gas. The cited portions of the Park reference do not mention using nitrogen in any capacity. *See, e.g.*, Col. 5:11-28. Moreover, a word search of the Park reference fails to identify any mention of the word nitrogen. Thus, Park does not teach using nitrogen as the carrier gas as asserted by the Examiner. Accordingly, the Section 102(b) rejection of claim 13 is improper and Applicant requests that it be withdrawn.

Applicant respectfully traverses the Section 103(a) rejection of claim 6 (which is based upon the Park reference) because the cited portions of Park fail to correspond to the claimed invention as discussed above in relation to the Section 102(b) rejection of claim 1. In at least this regard, the Section 103(a) rejection of claim 6 is improper because claim 6 depends from claim 1. Accordingly, Applicant request that the Section 103(a) rejection of claim 6 be withdrawn.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

Please direct all correspondence to:

Corporate Patent Counsel
NXP Intellectual Property & Standards
1109 McKay Drive; Mail Stop SJ41
San Jose, CA 95131

CUSTOMER NO. 65913

By: 

Name: Robert J. Crawford

Reg. No.: 32,122

Name: Bradley J. Barinsky

Reg. No.: 58,358

651-686-6633

(NXPS.265PA)